

TECHNIQUE FOR SYNCHRONIZING MULTIPLE ACCESS CONTROLLERS  
AT THE HEAD END OF AN ACCESS NETWORK

Abstract of the Disclosure

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A technique is described which may be used to synchronize a plurality of different access controllers which control a plurality of distinct ports at the Head End of an access network. In the context of a cable network, the technique of the present invention may be used to synchronize desired upstream and/or downstream channels across different line cards within a Cable Modem Termination System (CMTS). The technique involves utilizing a master time reference device which maintains and updates a current time reference, and periodically distributes synchronization signals to desired line cards in the system in order to synchronize these line cards. In a specific embodiment, the synchronization signals include current timestamp data generated from the master time reference device and distributed to all (or selected) line cards in the system. A slave time reference device on each of the line cards receives the periodic synchronization updates and uses the synchronization data to remain synchronized with the master time reference device. There are also provisions in this protocol to allow for hot insertion and removal of line cards, software reset or loading of the master and/or slave time reference devices, and redundant master time reference devices, including master time reference device fault detection and automatic fail over.